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William Hunting

NOT long ago we quoted from a letter addressed to the first Editor of THE RECORD, in which William Hunting was taken severely to task for the many shortcomings his correspondent found in the then new journal. Recently we have printed correspondence in which the present Editor, in his turn, is reproached for certain suggested shortcomings in the redesigned RECORD—most notably the omission of Hunting's head from the cover.

Let it be said, immediately, that the change was not made lightly, nor without full knowledge — and appreciation — of William Hunting's great contribution to veterinary science, and to this journal in particular. Nor are this, and the other changes, necessarily fixed and permanent. In particular, the future design of the cover has the attention of the Editorial Committee who may decide upon various amendments in due season.

It may be suggested, however, that in the presentation of the Association's official journal certain principles should be borne in mind. THE VETERINARY RECORD is the only weekly veterinary magazine in the world. It is read by our colleagues overseas wherever English is spoken. Is there not, then, an obligation upon us to see that its appearance is in keeping with the times, and appropriate to the high esteem in which the work, scientific and clinical alike, of our members is held? In this connection it may be observed that the present style of the cover is generally comparable not so much to the American journals, as has been suggested, but to the best weeklies here at home, some of whose traditions go back considerably further than do ours, and who have numbered among their editors giants from Samuel Johnson to Dickens.

So far as the omission of our founder's portrait is concerned it was felt that up-to-date presentation was virtually impossible while it remained, since the mode of photography, apart from anything else, "dated" the entire production. The retention of his name on the title page, on the other hand, secured a permanent and fitting memorial of the journal's debt to him—an honour not even accorded to the founder of *The Times*.

It may be added that the inclusion of the medallion of Hunting is not traditional, as some correspondents seem to imply. In point of fact it was not published at all until the issue of January 30th, 1932, some 12 years after THE RECORD was purchased by the Association. So far as we have been able to discover, the design of the front cover was changed at least five times between 1920

(Continued at foot of col. 1 overleaf)

The Effect of Oxytocic Principle on Experimental *Str. agalactiae* Mastitis in Cows

BY

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Introduction

IN a previous paper (Smith & Pattison, 1954) we failed to demonstrate any beneficial effect attributable to oxytocic principle in the treatment of *Streptococcus agalactiae* mastitis produced experimentally in goats. This was contrary to Schipper's observation (1953) that oxytocin was of considerable value in the treatment of mastitis in cows. In view of the publicity given to the use of oxytocin in mastitis therapy, and the important practical implications of Schipper's claims, it was desirable to repeat with cows the observations made in goats.

This paper records our unsuccessful attempts to show that oxytocic principle, administered as directed by Schipper, could modify the course of *Str. agalactiae* mastitis produced experimentally in cows.

Materials and Methods

The general techniques used for producing mastitis in cows have been described by Howell, Pattison, Holman & Smith (1954), and were similar to those used in goats by Smith & Pattison.

Experimental animals. These were eight five-year-old Ayrshire cows, in the fourth month of lactation, fed on standard rations and housed in isolation at this Field Station. Milking was with a machine for recording the yields of individual quarters.

Intramammary infecting dose. *Str. agalactiae* strain A 100 (Lancefield Group B type II), as used by Howell *et al.*, was injected with a syringe and round-ended needle into the teat sinus of one quarter of each cow in a dose of approximately 5×10^5 living organisms suspended in 10 ml. of Todd-Hewitt broth.

Oxytocic principle* and penicillin treatment. All injections of oxytocic principle were of 20 units inoculated into the jugular vein. Treatment with penicillin was with 10,000 units of crystalline sodium penicillin G dissolved in one millilitre of saline and injected once into the teat sinus through a round-ended hypodermic needle.

Tests for mastitis. Bacterial and neutrophil counts, Whiteside tests, sediment volume measurements, and recording of body temperatures, milk yields, and clinical examinations were made as described by Smith & Pattison. In addition, the daily appearance of the fore-milk was recorded thus:— 0, normal; 1, a few small flakes; 2, larger whitish flakes; 3, large yellowish clots; 4, massed clots, and a watery fluid.

Plan of experiment. Details of the treatment of the eight cows are given in Table I. The cows were paired, and at intervals of 4, 8, 9, and 15 days after infection with *Str. agalactiae* one of each pair (selected by tossing a coin) was treated with oxytocin and the other left untreated. Oxytocin treatment alone was given on one occasion only, about one hour after the morning milking, the cows being

TABLE I

DETAILS OF THE COWS USED TO TEST THE EFFECT OF OXYTOCIN AND OF OXYTOCIN AND PENICILLIN ON THE COURSE OF AN EXPERIMENTAL MASTITIS PRODUCED BY INOCULATION OF 5×10^5 LIVING *Str. agalactiae* STRAIN A100 INTO THE TEAT SINUS OF ONE QUARTER OF THE UDDER

Cow number	Daily average milk yield of the infected quarter before infection (lb.)	Number of days infection established before treatment with oxytocin	Treated seven days after oxytocin with
1	5·3	4	Oxytocin and Penicillin
2	4·9	Control	Penicillin
3	7·5	8	Oxytocin and Penicillin
4	5·5	Control	Penicillin
5	8·0	9	Oxytocin and Penicillin
6	9·0	Control	Penicillin
7	8·4	15	Oxytocin and Penicillin
8	6·6	Control	Penicillin

* Pitocin ; Parke Davis & Co.

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and 1932, and the addition of the medallion would seem to have been simply the outward evidence of the latest of these changes.

Modifications in the format of any old-established journal are always disconcerting to a section of readers. Veterinarians who take *Punch* may have joined in the chorus of protest with which the typographical changes in that journal were greeted. Yet *Punch* continues to enjoy an increasing prosperity. Twice in this generation have far-reaching changes been made in the format of *The Times*. Is our own journal to be any the less ready to adapt its appearance to the modern convention ?

To say this is not to indicate that the present changes are the last word; indeed constructive suggestions from our readers would be welcomed. Those whose responsibility it is to produce THE VETERINARY RECORD have but one end in view: to make the Association's journal the best of its kind in existence anywhere.

stripped out before injection; 20 minutes after injection the infected quarter of the treated animal and the infected quarter of the control were stripped dry. Seven days after treatment with oxytocin alone, the cows that had received oxytocin were again treated, this time with oxytocin and with penicillin inoculated into the infected quarter; control animals were treated with penicillin only.

Results

All animals developed in the inoculated quarter a clinical mastitis that could not be distinguished from the naturally occurring disease.

The immediate effect of intravenous oxytocin. A single injection of oxytocin given to four of the eight infected cows caused a spectacular let-down of milk. Before injection the infected quarter was stripped dry, but 20 minutes after injection it was possible to strip away some 350 to 630 ml. of secretion and clots. A maximum of about 10 ml. only was obtainable from non-injected animals at the same time.

The effect of a single injection of oxytocin on the course of the disease. The measurements made on four cows treated once with oxytocin and the four untreated animals, over a period varying from four to 15 days after infection and before treatment, and for seven days after treatment, are given in Table II and Fig. 1. Analyses of covariance of the figures in Table II for the measurements from each cow for the periods before and after oxytocin failed to reveal a statistically significant difference between the two groups of animals.

The effect of treatment with penicillin either with or without oxytocin. A small dose of penicillin (10,000 units in normal saline given once) was chosen in an effort to demonstrate a beneficial effect on the part of oxytocin. The infected quarter of each oxytocin-treated animal was stripped before the penicillin injection, and, as on the previous occasion, a very considerable amount of altered secretion and clots was removed. Strippings obtained before penicillin treatment from animals not given oxytocin were of a few ml. only. It happened, however, that the penicillin injection gave a bacteriological cure in every animal, and no adjuvant action in eliminating *Str. agalactiae* attributable to oxytocin was therefore demonstrated. The measurements for milk yield, neutrophil count etc., on all animals for seven days after penicillin treatment are given in Table II and Fig. 1. No modification of the course of the disease could be attributed to oxytocin.

Discussion

Schipper reported that the use of oxytocic principle was followed by considerable clinical improvement in cases of chronic and acute mastitis; in some instances no other treatment was necessary to effect a return to normal. Our own conclusion from the observations recorded in this paper is that the use of

TABLE II

RESULTS OF AVERAGE DAILY MEASUREMENTS MADE ON THE QUARTER INFECTED WITH *Str. agalactiae* OF EIGHT COWS TREATED EXPERIMENTALLY AS DETAILED AS IN TABLE I

Cow number	Milk yield* per cent	Bacterial count 10^4 per ml.	Neutrophil count 10^6 per ml.	Whiteside test	Sediment volume ml. per 10 ml.	Appearance of milk
Four to fifteen days after infection and before treatment						
1	75	2·1	11·25	3	0·1	3
2	68	3·0	12·45	2	0·2	2
3	62	2·7	5·72	3	<0·1	4
4	67	2·9	8·32	3	<0·1	3
5	87	1·8	2·14	2	<0·1	3
6	96	1·8	2·10	2	<0·1	2
7	78	2·3	4·28	2	<0·1	3
8	77	1·7	3·22	2	<0·1	3
Seven days after treatment with oxytocin only						
1	89	1·9	2·55	1	<0·1	3
2	82	1·8	2·61	1	<0·1	2
3	36	2·4	6·53	3	<0·1	4
4	60	3·1	6·74	2	<0·1	3
5	83	2·3	0·86	1	<0·1	1
6	89	2·3	3·92	2	<0·1	2
7	67	2·6	2·85	1	<0·1	3
8	63	2·3	3·56	1	<0·1	2
Seven days after treatment with oxytocin plus penicillin, or with penicillin only						
1	80	0·0	0·02	1	<0·1	0
2	90	0·0	0·07	1	<0·1	0
3	48	0·0	1·89	1	<0·1	1
4	58	0·0	1·05	1	<0·1	2
5	82	0·0	0·23	0	<0·1	1
6	87	0·0	0·78	1	<0·1	1
7	61	0·0	0·15	0	<0·1	1
8	61	0·0	0·74	0	<0·1	1

* Milk yield—per cent of average daily yield for seven days before infection.

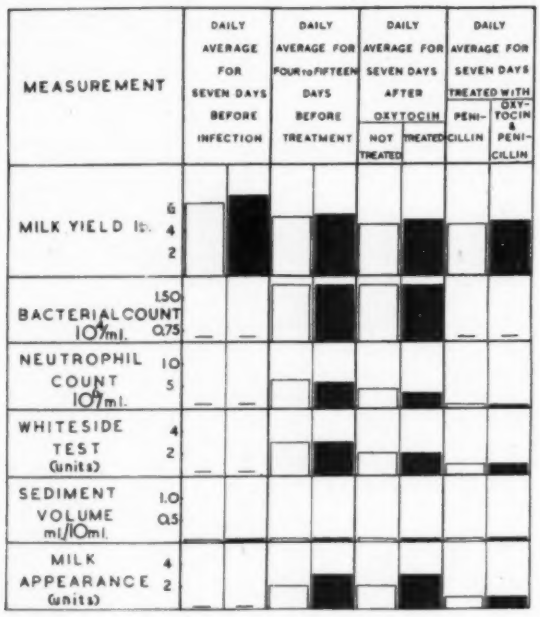

FIG. 1.—Results of daily average measurements made on the quarter infected with *Str. agalactiae* of eight cows treated as detailed in Table I.

oxytocin in the manner described is valueless in treating *Str. agalactiae* mastitis; in contrast to Schipper's findings, the milk from our cows did not become normal in appearance after oxytocin treatment.

It seems desirable, therefore, to offer some explanation for this difference of opinion as to the value of oxytocin therapy in mastitis.

We suggest that the explanation may be two-fold: (a) that the spectacular action of oxytocin in clearing clots and grossly altered secretion from a mastitic quarter, simulating, as it does, the traditional treatment of mastitis by frequent stripping, has been assumed as *bound* to be beneficial; (b) that Schipper based his conclusions on the purely subjective criterion of a return to normal appearance of what was previously macroscopically abnormal milk. With regard to (a), we were unable to find experimental proof for the hypothesis. With regard to (b), it appears important to emphasise that in a disease so difficult to assess as mastitis some sort of repeated *measurement* is essential when variation in intensity is to be judged. We think it basic to the study of mastitis therapy that the milk yield of each quarter and the degree of inflammation within the gland should be measured, and that the casual organism should be identified. The sudden changes in clinical intensity that can occur so readily without treatment in many forms of mastitis, make it essential that therapy be judged in a controlled and cautious manner. We consider that Schipper offered inadequate evidence for his conclusions, and we believe that if oxytocin has a place in mastitis therapy, then its value must be demonstrated by more adequate experimental proof than at present exists.

It may be useful to compare the findings reported here in experiments with cows, with those reported previously (Smith & Pattison) in goats. In Table III of our earlier communication it was shown that *Str. agalactiae* was isolated from the milk of all goats after penicillin treatment. The figures, however, were based on geometric means of the bacterial counts, and negative counts were classified as containing one organism, giving the impression, in the table, that penicillin treatment was unsuccessful in every case. In point of fact, 14 succeeding samples after treatment showed that a bacteriological cure was obtained in four of the eight goats, three treated with penicillin only and the other with penicillin plus oxytocin.

If the results for goats and cows are compared thus:—

		Penicillin treatment	
		Cured	Not cured
Goat	...	4	4
Cow	...	8	0

the exact test gives $p=0.077$, where 0.05 is the borderline of significance, a result which could not be accepted as indicating species difference.

One of the objectives of the studies initiated by Pattison, Taylor & Holman (1950) was to examine the possibility of using goats as experimental animals in investigations concerned with bovine mastitis. It has been stated during the course of these studies that the disease that can be produced experimentally in goats by inoculation of streptococci into the teat sinus has the same fundamental pathology as the natural disease in the cow. It seems to us, therefore, that by employing goats instead of cows useful *initial* studies on the therapy of bovine mastitis could be carried out simply, inexpensively, and in a properly controlled manner.

Summary

Intravenous injection of oxytocin had no effect on the course of an experimental *Str. agalactiae* mastitis in cows. At the dosage employed a combined therapy of oxytocin and penicillin proved no better than penicillin alone in treating the disease.

Acknowledgment.—We are grateful to G. N. Henderson, Esq., B.SC., M.R.C.V.S., of Parke Davis & Co., for arranging the supply of oxytocin given gratis by the Company.

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The Elimination of *Trichomonas foetus* from Infected Semen by Storage in the Presence of Glycerol

BY

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Introduction

THE usual course when trichomoniasis is diagnosed, is to kill the infected bull and to rest the females before subsequent artificial insemination. In this way transmission of the infection is controlled with certainty. Sometimes, especially when the bull has a valuable pedigree, these measures incur serious economic loss, and on several occasions a number of workers have devoted attention to other means of preventing the transmission of the infection. Various methods of treatment have been described, but they are of little value because the results are irregular and it is not easy to detect the infections which resist the treatment.

It was thought that *Trichomonas foetus* might be unable to survive the manipulations involved in semen dilution and storage. This might have offered some method of controlling the transmission of the disease, but Joyner & Millar (1950) showed that in normal artificial insemination practice all the conditions existed for the widespread dissemination of the infection.

Rowson & Polge (1951) showed that bull semen could be satisfactorily stored at −79° C. in the presence of glycerol, and Polge (1953a) suggested that this process might kill trichomonads present in the semen. At the request of the Veterinary Officer, Department of Agriculture, Barbados, B.W.I., an investigation into this possibility was undertaken at Weybridge. For this purpose it was decided to add active trichomonads to semen or seminal plasma and subject them to the process of dilution and low temperature storage, testing the viability of the protozoa at different stages.

Methods and Materials

The trichomonads used in these experiments were derived from two sources. They were recovered from an infected bull by the preputial washing technique used in previous studies (Joyner & Millar, 1950), and from cultures of the Belfast strain originally isolated by Dr. Muriel Robertson. The medium used for the cultivation of the parasites was the glucose-broth-serum medium (G.B.S.) described by Kerr & Robertson (1943) and modified by Pierce (1949). When cultures were prepared from material derived from preputial washings, approximately 100 units penicillin per ml. and 1 mg. streptomycin per ml. were added to control bacterial growth. Two types of semen diluent were used:— (a) a mixture of equal parts of egg yolk and 3.92 per cent. sodium citrate solution adjusted to *p*H 6.7 (Wellcome); (b) 10 per cent. dried whole-milk powder in the buffered sodium citrate solution.

The protozoa were counted in a Thoma haemacytometer chamber after diluting in saline and immobilising with formalin.

The glycerol used in the earlier freezing experiments was a commercial " Analar " grade (B.D.H.) but in all later experiments a re-distilled sample prepared by Mr. A. B. Paterson of the Biochemistry Department at Weybridge, was used. The glycerol was diluted by volume, but it was measured by weighing and the volume was calculated from the density (S = 1.26).

Experimental Results

The growth of *T. foetus* in the presence of glycerol

The most sensitive method of detecting the presence of viable trichomonads is by demonstrating their growth in culture. Before applying this method to mixtures containing glycerol it was important first to determine the minimum concentration of glycerol which would inhibit growth in order to ensure that in subsequent tests this concentration was not exceeded.

Dilutions of glycerol were prepared in liquid medium (G.B.S.) containing 100 units penicillin and 1 mg. streptomycin per ml. and a suspension of trichomonads from a two-day culture was added to give a final concentration of 100,000 organisms per ml. The *p*H of the final suspensions on every case was found to be between 7.0 and 7.2. The cultures were incubated at 37° C. and examined in the third and fourth days after inoculation and again on the sixth day to ensure that no further growth had taken place. The results of two experiments are summarised in Table I.

TABLE I

THE EFFECT OF DIFFERENT CONCENTRATIONS OF GLYCEROL ON THE GROWTH OF *T. foetus*

Concentration of glycerol— per cent.	Number of trichomonads per ml.			
	After three days		After four days	
	Experiment I	Experiment II	Experiment I	Experiment II
10·0	Nil	Nil	Nil	Nil
5·0	440,000	170,000	1,210,000	380,000
2·5	870,000	1,280,000	2,840,000	2,460,000
1·0	2,500,000	4,010,000	6,150,000	3,720,000
0·5	4,250,000	4,110,000	3,510,000	4,510,000
0·0	1,680,000	1,450,000	3,300,000	1,690,000

It is evident that the trichomonads multiplied in the presence of concentrations of glycerol up to five per cent., but in the presence of 10 per cent. glycerol growth was completely inhibited.

The effect of freezing to minus 79° C. in the presence of 10 per cent. glycerol

Approximately 20,000,000 trichomonads were obtained from cultures of the Belfast strain and washed once with saline before adding to 2.5 ml. semen or seminal plasma. In a second series of experiments the same amount of semen or seminal plasma was infected by the addition of the centrifugalised deposit from a preputial washing from an infected bull, containing 500,000 to 1,000,000 parasites.

Aliquots of the above suspensions were added to nine volumes of 50 per cent. egg yolk in citrate buffer or 10 per cent. milk powder in citrate buffer. The mixtures were placed in a water bath and cooled slowly in the refrigerator at +5° C. for five hours after which time an equal volume of diluent containing 20 per cent. glycerol was added. The final dilution of the infected semen was thus 1 in 20. The suspensions were left in the refrigerator overnight and one ml. amounts were then sealed in glass ampoules.

Two methods of freezing the suspensions were used:—

(1) The ampoules were placed in alcohol in a thermos jar at +5° C. and solid carbon dioxide was slowly added so that the temperature was reduced to −10° C. at the rate of 0.5° C. per minute. Solid CO_2 was then rapidly added until the temperature was reduced to −79° C., at which temperature the ampoules were stored for 24 hours.

(2) The ampoules were rapidly frozen by packing in a thermos jar with crushed carbon dioxide, in which the ampoules remained for 24 hours.

Both the above methods have been found to allow satisfactory survival of the spermatozoa (Bruce, 1953).

After storage at −79° C. for 24 hours the ampoules were thawed in warm water and tested for the presence of viable trichomonads by inoculating G.B.S. medium with 0.5 ml. amounts. Similar cultures were also made after five hours at +5° C. and after standing overnight in the presence of glycerol. The cultures were examined after seven days' incubation at 37° C. The results are recorded in Table II, and it is evident that none of the trichomonads survived the freezing process.

The Effect of Glycerol on Trichomonads

It has already been shown that 10 per cent. glycerol inhibited the growth of *T. foetus*. It is also apparent from the results recorded in Table II that 10 per cent. glycerol killed a proportion of the trichomonads before freezing to −79° C. To observe the direct effect of glycerol on the active protozoa, trichomonads from a culture were suspended in fresh culture medium containing 10 per cent. glycerol at room temperature. The majority of the trichomonads were rapidly immobilised, but flagellar activity of some of the organisms was maintained for several hours, although the rate of activity was reduced.

It seemed likely that glycerol would have a lethal effect upon trichomonads at +5° C. To confirm this and to determine whether the effect could be enhanced, further experiments were carried out.

Trichomonads from two- or three-day cultures and from preputial washings were re-suspended in egg-yolk citrate. The suspensions prepared from cultures contained 10,000,000 trichomonads per ml., while those prepared from preputial washings contained 1.5 to 0.5 million organisms per ml. 0.1 ml. amounts of these suspensions were added to 5 ml. quantities of dilutions of glycerol, varying between

TABLE II

THE VIABILITY OF TRICHOMONADS ADDED TO BULL SEMEN STORED AT MINUS 79° C.

Origin of trichomonads	Diluent	Method of freezing to −79° C.	Viability of trichomonads at different stages in cooling								
			After 5 hours at +5° C.			After overnight storage in 10 per cent. glycerol at +5° C.			After storing at −79° C. for 24 hours		
			Experiment number			Experiment number			Experiment number		
			1	2	3	1	2	3	1	2	3
Preputial washing	Egg yolk-citrate buffer	1 slow	+	+	+	+	Neg.	Neg.	Neg.	Neg.	Neg.
		2 rapid							Neg.	Neg.	Neg.
Preputial washing	10 per cent. milk powder in citrate buffer	1 slow	+	+	+	+	Neg.	Neg.	Neg.	Neg.	Neg.
		2 rapid							Neg.	Neg.	Neg.
Culture	Egg yolk-citrate buffer	1 slow	+	+	+	+	+	+	Neg.	Neg.	Neg.
		2 rapid							Neg.	Neg.	Neg.
Culture	10 per cent. milk powder in citrate buffer	1 slow	+	+	+	+	+	Neg.	Neg.	Neg.	Neg.
		2 rapid							Neg.	Neg.	Neg.

0 and 20 per cent., prepared in egg-yolk citrate diluent cooled to +5° C. 0.2 ml. samples were withdrawn at intervals of five minutes, 30 minutes, one hour, two hours, five hours and 24 hours respectively, and inoculated into culture medium. For each concentration of glycerol it was possible thus to estimate the time required to kill all the trichomonads. The results of four experiments are recorded in Table III.

TABLE III

THE TIME TAKEN TO KILL TRICHOMONADS SUSPENDED IN VARYING CONCENTRATIONS OF GLYCEROL AT +5° C.

	Time taken to kill trichomonads			
Experiment number	1	2	3	4
Source of trichomonads	Culture	Culture	Bull	Bull
Concentration of glycerol				
0	+	+	+	+
1 per cent.	+	+	+	+
2 „	+	+	+	+
5 „	24 hrs.	24 hrs.	4 hrs.	24 hrs.
10 „	24 „	24 „	1 hr.	30 mins.
20 „	1 hr.	2 „	5 mins.	5 „

+ = Trichomonads still viable after 24 hours.

It is evident that the trichomonads were killed by the glycerol. The maximum time taken to kill all the organisms by 20 per cent. glycerol was two hours, whereas 24 hours was the maximum time required in 10 per cent. glycerol. There is some evidence that the trichomonads from the preputial washings were more sensitive to glycerol than the organisms derived from cultures, since the time required to eliminate the latter was appreciably longer. The greater numbers of trichomonads derived from cultures may, however, account for this difference.

In this series of experiments the trichomonads were introduced into glycerol dilutions already cooled to +5°C. whereas in the normal freezing process this cooling is allowed to take place slowly. As a final test therefore, three experiments were carried out in which trichomonads derived from preputial washings were suspended in seminal plasma and diluted 1 in 5 in egg-yolk citrate diluent to contain 100,000 to 200,000 trichomonads per ml. The mixtures were then immersed in a glass vessel containing one litre of water at room temperature and then placed in a refrigerator at +5° C. In the same vessel were placed equal volumes of 40 per cent., 20 per cent. and 10 per cent. glycerol respectively in egg-yolk citrate and five hours were allowed for slow cooling. At the end of this time the equal volumes of trichomonad suspension and glycerol dilution were mixed to give final concentrations of 20, 10 and 5 per cent. respectively. Cultures prepared at this stage were all positive, but after storing overnight, *i.e.* 16 hours at +5° C., no viable trichomonads could be detected in the mixtures containing 10 or 20 per cent. glycerol, whereas in the absence of glycerol positive cultures were obtained.

Discussion

It has been reported by several authors that the addition of sulphonamides or antibiotics to semen results in an improvement of the conception rate. Almquist (1949), Foote & Bratton (1950) and Stewart, Melrose & Wilson (1951) showed that this effect was particularly marked when bulls with initially poor conception rates were used. Polge & Rowson (1952) obtained evidence suggesting that the addition of glycerol also improved the effectiveness of some bull semen. Holt (1953) observed a similar effect on adding glycerol to semen and it was shown that the rise in conception rate depended upon the raising of low fertility rates of individual bulls to normal levels. A possible explanation of these effects is that some infective agents responsible for the poor conception rates of these bulls may be eliminated from semen during storage.

Not all cells are equally tolerant of high concentrations of glycerol and Polge, Smith & Parkes (1949) found that 2.4 per cent. is the maximum concentration which can be rapidly introduced into rabbit semen without adversely affecting the spermatozoa, whereas horse spermatozoa have been shown by Smith & Polge (1950) to tolerate 30 per cent. glycerol. Similarly *Trichomonas foetus* is unable to survive in concentrations of glycerol which are tolerated by bovine spermatozoa. Bovine spermatozoa have been found by Polge & Rowson (1952) to survive exposure to as much as 15 per cent. glycerol, but at concentrations much above 10 per cent. a progressive decrease in the number of motile spermatozoa occurs (Polge, 1953b). McEntegart (1954) has examined the ability of several species of *Trichomonas* to survive freezing to −79° C. in culture medium containing varying concentrations of glycerol. It was found that *T. columbae*, *T. vaginalis* and *T. hominis* were able to survive the freezing process to varying degrees but *T. foetus* was invariably killed.

Freezing to −79° C. in the presence of 10 per cent. glycerol, which kills *Trichomonas foetus* but allows bovine spermatozoa to survive, is an extremely satisfactory method of treating infected semen. Such a low temperature, however, may be difficult to attain under field conditions. It has been shown that it is possible to destroy the parasites by exposure to higher concentrations of glycerol at +5° C. At this temperature 10 per cent. glycerol for 16 hours did not eliminate all the trichomonads in the experiments recorded in Table II. As shown in Table III, 20 per cent. is more effective. A suitable treatment of infected semen would therefore consist of dilution with egg-yolk-citrate and slow cooling to +5° C., addition of glycerol to give a final concentration of 20 per cent., and storage overnight for 16 hours. The final dilution of semen in both these methods being 1 in 20. The period of exposure to glycerol could be curtailed but this period is suggested as an added precaution. Nevertheless it should not be extended as 20 per cent. glycerol is near the limits of tolerance for the spermatozoa.

Joyner & Millar (1952) showed that one of the dangers of using bulls infected with *T. foetus* for

artificial insemination is the possibility of transmitting the infection from one bull to another. Strict hygienic precautions must therefore be observed in applying the above methods and the details of these experiments must also be carefully followed because slight changes in the physical conditions may modify the effect of the glycerol.

It should be stressed that the slaughter of infected bulls remains the best way of controlling the spread of the disease. The method described above is only worth considering where the slaughter of a bull would involve disproportionate loss.

Summary

Trichomonas foetus can be eliminated from infected semen by storing overnight at +5° C. in 20 per cent. glycerol or preferably by freezing to −79° C. in the presence of 10 per cent. glycerol.

Acknowledgments.—Acknowledgments are due to Mr. D. R. Melrose who first drew the author's attention to a situation where this procedure might be of value, and also to Mr. D. L. Stewart and Mr. W. Bruce of the Reading Cattle Breeding Centre for several helpful comments and a demonstration of the method of semen freezing.

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THE FOOD & DRUGS AMENDMENT BILL

Members of the profession will be interested in an important amendment to this Bill, which has been accepted by Parliament. This amendment will enable regulations to be made requiring the *ante-mortem* inspection of poultry, a point of principle advocated by veterinarians over a long period.

ERRATUM

In the Annual Report of the Veterinary Department, Northern Region, Nigeria, 1952-53, published last week, the quoted remarks of the Director should have ended at the words "during the year," and not at "be directed" as printed.

The Treatment of Virus Pneumonia of the Pig with Chloramphenicol

BY
RICHARD H. C. PENNY
Leighton Buzzard

ARTICLES from several countries have appeared in the veterinary literature following the findings of Pullar (1948 & 1949) working in Australia with a pneumonia of pigs distinct from swine influenza. Hitherto the latter disease had been considered the most common respiratory affection of the pig, but it is now evident, from further work, that virus pneumonia is widespread in Europe and elsewhere. Pullar dealt very briefly with treatment and suggested that sulphadimidine* should be given a trial.

In this country Gulrajani & Beveridge (1951) reported on the disease, described transmission, and their failure to infect laboratory animals—ferrets, mice and the chick embryo. Betts (1952) discussed clinical aspects and epidemiology and touched on treatment. He stated that chlortetracycline (aureomycin) besides having an effect on the secondary bacteria, usually Pasteurellae and Streptococci, had some effect on the virus itself. Sulphonamides, streptomycin and penicillin affect the secondaries only. Again (in 1953 a & b) he discussed treatment of the condition and said chlortetracycline and oxytetracycline (terramycin) had some effect on the virus when given early in the course of the disease and in sufficient dosage. He further stated that the antibiotics had little effect on already established lesions. In an article with Beveridge (1953) the very serious effects of the disease on growth-rate and the efficiency of food utilisation were considered, and an approximate national loss was calculated, stressing the importance of the condition.

More recently Börnfors (1954) working in Sweden on a disease, probably identical to virus pneumonia, described treatment of the condition with chlortetracycline. The dosage used was 40 mg. per kg. bodyweight daily, divided into three doses. Treatment was prolonged (10 to 50 days) and no toxic side-effects were reported. Cases were diagnosed clinically and X-ray photography was carried out, before and after treatment, to confirm the results. His findings suggest that chlortetracycline had an undoubted effect on clinical cases when treatment was commenced in the early stages and continued for a sufficiently long period. The tendency for the chronic form to develop with widespread lung lesions and a poor growth rate was greatly reduced, and, even when pneumonia was well established, at the time of X-ray, fair results could be expected. Wesslyen & Lannek (1954), also from Sweden, published work relating to the cultivation in tissue culture of a cytopathogenic agent from the lungs of affected pigs. The agent isolated was found to be highly sensitive *in vitro* to both oxytetracycline and chlortetracycline.

* Sulphamezathine.

In this short survey of the literature relating to treatment, and the likely agents for treatment, of virus pneumonia, one antibiotic is conspicuously absent. Chloramphenicol (chloromycetin) is a broad spectrum antibiotic with a similar range of usefulness to that of chlortetracycline. It is effective against a wide variety of gram-negative and gram-positive bacteria, rickettsiae and some of the larger viruses. In humans it has been used extensively for bacterial and virus infections with relatively few toxic side-effects. The latter consist mainly of stomatitis, glossitis, gastrointestinal upset, proctitis and occasionally, after prolonged dosage, severe haemopoietic changes (Martindale, 1952). In animals the drug is well tolerated (*B. Vet. C.*, 1953) and it has a further important advantage in that it is readily obtainable.

The writer's attention first turned to chloramphenicol after he had used it, in capsule form, on a litter of nine suckling piglets with acute pneumonia. The condition had already been treated with penicillin and streptomycin without effect, and two piglets had died. The dosage used was 25 mg. per kg. three times daily for two days, and total remission of symptoms occurred in seven out of the nine piglets. Two were left stunted. Administration was by means of a sheep-balling gun, and, although an easy procedure in some cases, it was most difficult in others.

More recently, however, a suspension of chloramphenicol has been produced for deep intramuscular injection. In humans intramuscular chloramphenicol in propylene glycol was associated with considerable pain at the injection site (Martindale, 1952), but this would not appear to be the case with the preparation used either in pigs or calves. No particular age-group or breed of pigs has been taken, although most have been pedigree large whites from breeding establishments. All cases have been treated (including acute ones), with a pneumonia suspected of being mainly due to virus, chronic virus cases with cough and secondary breakdowns.

Dosage and Administration

Variable dosage rates have been used, but a satisfactory standard is 25 to 35 mg. per kg. (approximately 2 lb.) bodyweight daily for three days, with twice daily injections in severe cases. The preparation used was packed in rubber-capped vials and a 40 per cent. suspension was prepared by adding 4.6 c.c. saline, the resulting product containing 2 g. chloramphenicol in 5 c.c. Needles not less than 9/10 × 25 m.m. (1″) for small pigs and 14/10 × 38 m.m. (1½″) for large pigs were used, ensuring easy and deep injection of the rather thick suspension.

The table shows briefly the number and the type of cases treated.

Type of Pneumonia	Age	No. Treated	Approximate Dosage
Suspected acute virus	Suckling pigs	28	¼–½ gm.
Suspected chronic virus	2–4 months	20	½–1½ gm.
Suspected secondary acute	3–12 months	24	1–2 gm.
	Total	72	

Results

So far results have been very encouraging, and in all cases they have been infinitely superior to other forms of treatment used by the writer. Previously treatment of suckling pigs was most uncertain, but in the 28 cases treated, only four failed to grow normally according to owners' reports. Weaning weights were available for only two out of the four litters treated, but they were average for the farm concerned (36 lb. at eight weeks). In the chronic group, results were not so marked and accurate controls were not available. Clients, however, reported favourably on the reduced frequency of cough and increased growth rate of treated pigs. The writer is also of the view that many cases benefited by the injection. In the final group results were most encouraging and nine cases, previously treated with streptomycin without effect, resolved speedily with chloramphenicol. A further two cases that relapsed following penicillin therapy responded quickly to chloramphenicol.

Side Effects

One pig was acutely lame on the leg used for the first injection, and the owner stated that this lameness had appeared soon after handling. The lameness had disappeared on the next visit. The probable cause was faulty technique, the injection having been made around a major nerve. It was not likely to be due to excessive separation of muscle fibres because similar doses had been given many times before without apparent ill effect. One reason for the lack of pain encountered in pigs might be the very small bulk of suspension injected.

Summary

The available literature relating to the treatment of virus pneumonia of pigs has been surveyed and a chloramphenicol suspension for intramuscular injection has been investigated. No toxic side-effects have been encountered apart from one case of temporary lameness attributable to the injection. In the writer's view it is superior to other forms of treatment and undoubtedly warrants further study and a controlled field trial.

Acknowledgment.—My thanks are due to Parke, Davis & Company, Limited, for supplies of chloromycetin.

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Current Literature

ABSTRACTS

Field Control of Mastitis. WILSON, C. D. (1954). *St. vet. J. Minist. Agric., Lond.* **9.** 22-27.

The author summarises his experiences on the control of *Str. agalactiae* in 600 herds participating in a scheme within the county of Surrey. Many fundamental observations were made, and the main conclusions drawn from the experiment were:—

(1) That success was proportional to the co-operation of the farm personnel in carrying out hygienic precautions.

(2) The use of disinfectant procedures need not be extended beyond application to the teats and hands which are the main reservoirs of infection.

(3) The continuance of infection may be due to an occasional resistant cow, and its reintroduction due to outside purchases or employment of a new milker.

The advantages attendant on the eradication of *Str. agalactiae* are threefold, namely—freedom from clinical disease, increased milking life and yield of the cows.

The author compares the disinfectant properties of the hypochlorites and quaternary ammonium compounds, and while the latter possess an advantage in that their potency is less reduced by organic dilution, they have disadvantages, so that a search is still being made for a suitable disinfectant.

The author points out the need to examine antibiotics apart from or in combination with pencillin which may be more effective in treating mastitis due to resistant organisms especially *staphylococci*, and outlines briefly how such a trial is being carried out.

S. J. E.

(Extracted by kind permission of the Editor of the "State Veterinary Journal").

Staphylococcal Food-Poisoning Due to Infected Cow's Milk. STEEDE, F. D. F., & SMITH, H. WILLIAMS. (1954). *Brit med. J.* 576-578.

The authors describe three small outbreaks of food-poisoning that occurred on different occasions in a household whose milk supply came from a single house-cow. On each occasion symptoms of nausea, abdominal pain, vomiting and diarrhoea developed about three hours after the consumption of cream prepared from this cow. The symptoms persisted for about 48 hours.

The first outbreak was not investigated, but following the second outbreak apparently identical strains of *Staph. pyogenes* were isolated from the peccant cream, from one of the cow's quarters and from the milker's nose. All these isolations belonged to phage type 53+, caused opacity in egg yolk, and produced α and δ toxins but no β toxin. These characteristics are more commonly found in strains of human origin than in strains isolated from cattle, and the authors therefore suggest that the infection in the cow's quarter probably originated from that in the milker's nose.

The infected quarter and the milker's nose were treated with apparent success, but about four months later a third outbreak of food-poisoning occurred in the same household and an apparently identical strain of *Staph. pyogenes* was again isolated from the milker's nose, faeces of affected persons, the same quarter of the cow, and the cream.

E. A. G.

Use of Trypsin in Veterinary Practice. BUNCE, D. F. M. (1954). *N. Amer. Vet.* **35.** 526-529.

Trypsin, one of the extracts of pancreatic juice, can be used in veterinary practice to liquefy purulent and necrotic material, without concurrently injuring living tissue. The author considers that in addition, bacteria present in a lesion lose their protective fibrinous nucleo-protein "cover" and are rendered more susceptible to the action of antiseptics and antibiotics.

The enzyme has been prepared in a pure crystalline form, in which state it is stable. Solutions of trypsin lose their activity within a short perod owing to autocatalysis.

Its use in animals has not been followed by signs of sensitivity or antigenicity. A transient hyperthermia sometimes occurs and its use in certain conditions, *e.g.* when injected into closed body cavities, causes the liberation of histamine. This latter effect can be prevented by the prior administration of an antihistaminic. Treatment may be repeated at frequent intervals, if necessary, without fear of side effects. Living cells are not affected due to the presence of certain anti-tryptic factors in viable tissue.

The drug may be administered in the following ways:—

(a) Topical application of the crystals.

(b) Injection or infusion of the solution.

(c) Insertion of a gelatine capsule containing the crystals.

The drug has an optimum *p*H for maximum effect and the use of a phosphate buffer with it is recommended. Free drainage should be allowed. The dosage varies with the size of the lesion and the amount of necrotic material present.

Indications listed by the author include severe purulent mastitis, traumatic pericarditis, pyometra, purulent sinusitis and foot-rot in cattle; fistulous withers in horses; otitis externa, abscesses, haematomata, suppurative arthritis, pyometra, and empyema in small animals.

The author quotes the treatment of bovine purulent mastitis. The method used was to strip the affected quarter, inject 200,000 to 400,000 Armour Units of trypsin (1,000 A.U.=1 mg. tryptic activity) in 100 to 150 ml. Sorensens phosphate buffer through the teat canal and leave for a few hours. At the end of this time suitable antibiotics were administered intramuscularly, followed by 2 ml. purified oxytocin, after which the quarter was milked out. The process was repeated daily until recovery was complete. The author quotes another report concerning the successful treatment of traumatic pericarditis in a cow by infusion of a solution of trypsin into the pericardial sac, after rib resection.

M. B. H.

REPORT

Report on the Animal Health Services in Great Britain, 1953. H.M.S.O. 3s.

This Report on the work of the Animal Health Division now seems to have settled back into an annual rhythm and the period reviewed is the calendar year, 1953.

In a brief introduction, reference is made to the origin and past history of the Division, recalling its character as a defence force against invasion and its successes in eradicating and repelling major epidemics from overseas. That the world spread of official measures to control animal diseases has not yet progressed to the point where such vigilance can be relaxed is illustrated in a table of outbreaks occurring in some European countries. The expanding international outlook on affairs generally and the veterinary contributions to F.A.O. and W.H.O. suggest that an elaboration and extension of these data to cover a much wider territory than Europe would be a welcome feature of future reports, if only to put the Ministry's defence service into perspective. But the emphasis of effort is now shown to be directed towards diseases regarded as endemic in Britain, although some of these, like anthrax, swine fever, and fowl pest are still being reinforced from abroad.

On the scheduled diseases, the most striking observation is that we may now hopefully regard sheep scab as eradicated. The effect of subsidised vaccination against swine fever is not yet evident. The acute European type of fowl pest has given place to the sub-acute form and the Ministry aims at eradication by continuing a policy of slaughter. An attempt was instituted to eliminate the warble fly from a self-contained area, the Isle of Wight, the result of which will no doubt be reported next year.

Progress under the Attested Herds Scheme and the Area Eradication Plan is encouraging. At the end of the year, 44 per cent. of all cattle were in attested herds. More calves were vaccinated with Strain 19 in this ninth year of the operation of the scheme than in any previous year, but the Report gives no index of its effect on brucellosis. Three further cases of *Br. Melitensis* in milk are recorded, but no evidence of consequent undulant fever in man has been detected from these or the previous cases.

The work of the Ministry's laboratories at Weybridge, Lasswade and Blackford, and that of the Veterinary Investigation Service now constitutes about half the Report. While the laboratories are primarily concerned, in their researches, with farm animals, it is interesting that Rubarth's disease and distemper are subjects of study. Production of biologicals, shown in tabular form, is on an impressive industrial scale.

The period of the Report ends too soon for mention of some matters of current interest: myxomatosis, atrophic rhinitis, virus hepatitis of ducklings. The collection and arrangement of data necessarily delay publication so that official reports always seem a little out of date. This one is commendably early for a document containing so much condensed information. It is, of course, coldly impersonal. One could hope that future editions might be a little more expansive, reviewing the past, assessing the present and even speculating about the future, so that the ordinary reader could penetrate a little further into the official mind. The present Report is a record of very good work, but to find out how good, one has to turn to the kind of tribute paid to the Ministry's veterinary staff by the Departmental Committee on Foot-and-Mouth Disease, 1952-1954.

FIFTY YEARS AGO

The current correspondence under the heading "A Legitimate Grievance," finds an echo in an issue of THE RECORD for November 1904. In that case Lord Onslow, in addressing a meeting of Scottish farmers had suggested that official help might be given to them so that they could diagnose and treat their own animals. William Hunting expressed himself as follows:—

"We do not understand the curious paragraph directing attention to the future labours of the Board of Agriculture. The President thinks: 'We shall have to direct our attention very much to what I may call assisting the farmers in helping them to diagnose and treat the diseases of their stock.' We confess we are at a loss to make out exactly what this means. So far the Board has assisted in the diagnosis and treatment of the diseases of stock by publishing and disseminating small tracts containing an account of symptoms of some diseases and a very curt description of treatment. This is bad enough, but no worse than the articles contributed to agricultural papers by veterinary surgeons. The words of Lord Onslow suggest that in future the veterinary experts of the Board will be partially employed in gratuitously diagnosing and treating disease on the farmers' premises as is done in South Africa. We take no objection to the State help given in the Colony because whole districts have no resident veterinary practitioner, and because a large proportion of the more fatal diseases prevalent require investigation and research to determine their nature. At home it is quite different. No district is without its veterinarian and only a few diseases require scientific investigation other than what can be supplied by the local expert. Our practitioners are recognised by a State Charter, they have undergone an expensive course of training, and it would be grossly unfair to take from them their practice by supplying gratuitously what they are quite capable of affording for fair remuneration."

THE SUPPLEMENT

The current Supplement to THE RECORD is in course of preparation, and the Editor would be greatly obliged if Honorary Secretaries who wish to have Divisional notes published would be good enough to forward them not later than Wednesday, November 24th.

It will be necessary to hold over contributions received after this date until the New Year.

CONGRESS ATTENDANCE LIST

We record below the names of members of the Association, and visitors, who attended the Torquay Congress. A list of the delegates from Government departments, Local Authorities, etc., together with the names of overseas representatives was published in our issue of September 25th. There are six omissions due, unfortunately, to inability to decipher the handwriting of those concerned.

Messrs. S. G. Abbott, G. C. Ainsworth, F. C. Alexander, J. Allcock, C. G. Allen, J. A. Anderson; Mrs. S. L. Applebey; Messrs. M. R. Ashoub, G. Atkinson; Dr. F. I. Awad; Messrs. J. Barr, E. P. Barrett; Dr. N. S. Barron; Messrs. W. B. Bateson, H. Begg, R. W. Betty, A. G. Beynon, N. McG. Black, P. S. Blackburn, G. Blaikley; Prof. F. Blakemore; Dr. W. P. Blount; Miss W. M. Brancker; Messrs. G. C. Brander, A. D. J. Brenhan, R. C. Broad, J. Brown, J. W. Bruford, J. A. Bunker, H. E. Bywater (Hon. Treasurer), M. Callow, J. Cameron, S. R. Campbell, F. T. Camps, E. N. Clark, R. Clarke, R. J. Carr; Mrs. M. J. Case; Messrs. R. W. L. Chesney, E. Cotchin, T. G. Coward, R. W. Crocker; Miss M. E. Crott; Messrs. J. A. Dall, B. B. Daniel, H. S. Davies, C. Dickson, J. Donald, J. K. D. Dow, K. D. Downham, J. D. Dunn; Mrs. R. Eden; Mr. B. C. M. Edmonds; Dr. S. J. Edwards; Miss D. N. Egginton; Messrs. D. R. Etoe, H. L. Evans, I. Fincham, P. Fisher, R. C. V. Fisher, E. J. H. Ford, J. Foster, R. C. Fox; Miss M. J. Freak; Messrs. J. A. Garrett, A. C. Gibson, A. C. Gillespie, K. C. Gledhill; Prof. R. E. Glover; Dr. R. F. Gordon; Messrs. A. M. Graham, J. Gray; Dr. A. Greig; Messrs. R. C. G. Hancock, D. Harkness, C. B. Hart, R. L. L. Hart, R. W. Hartley, H. G. Harvey, M. B. Hawksley, H. F. Hebeler, G. N. Henderson, E. W. Hendrie, J. W. Heney, W. C. Hesketh, H. R. Hewetson, J. Hickman, F. J. Hill, R. B. Hill, J. R. Holmes, A. F. Holt, J. R. Hudson, J. McC. Ingram (Hon. Secretary), O. F. Jackson, R. A. James, S. Jennings, R. Jobling, F. V. John, H. M. John, E. Jones, B. R. Jones, B. V. Jones, K. W. Jones; Miss J. O. Joshua; Mrs. K. G. R. Kelly; Messrs. G. F. Kershaw, A. A. Kidd, J. S. J. Lauder, D. E. Leask, P. R. Leckie, J. W. S. Leiper; Miss M. V. Levie; Messrs. D. G. Llewellyn, R. C. Locke, R. M. Loosmore, S. F. McCormac, G. A. Macdonald, J. R. McGirr, J. McIndoe, W. M. McKay, J. M. McKellar, W. Mackinnon; Mrs. M. H. Maclay; Messrs. A. W. MacLeod, R. M. Macnab, W. D. Macrae, T. M. Z. Mahamooth; Mrs. J. M. Makinson; Messrs. T. B. Mann, A. Marr, W. B. Martin, A. Mather, P. A. Mathew, P. Mathews, N. H. Mathieson, D. W. Menzies, A. Miller; Dr. A. Moldawsky; Dr. R. F. Montgomerie; Messrs. D. G. Morgan, K. E. Morgan, K. G. Morgan, C. T. Murphy, J. M. Murphy, H. J. D. Neil, J. W. Nicholas, E. J. L. Norman, J. P. Nowlan, D. D. Olgivie, G. M. G. Oliver, M. B. Orfeur, D. E. Orr, A. D. Osborne; Miss J. Osborn; Mr. K. O'Sullivan; Prof. C. W. Ottaway; Messrs. J. Parker, W. H. Parker, J. W. R. Pearce, J. K. L. Pearson; Miss B. Penhale; Messrs. L. E. Perkins, D. W. S. Pettett; Miss L. H. Phillips; Messrs. R. N. Phillips, J. Plenderleith, C. J. Price, F. J. Proctor, W. A. Pool, R. Potter, C. R. A. Powell; Prof. L. P. Pugh; Messrs. J. D. Rankin, P. Rayne, S. R. Reed, A. Reid, J. Reid, S. R. Rippon, A. F. Ritchie, H. R. Roberts, S. W. Roberts; Prof. Alex. Robertson (President); Messrs. C. Robinson, W. G. Robinson, W. J. B. Robson, H. W. Roofe, R. W. Ross, M. Rossiter, G. A. H. Rudland, D. Russell, J. L. Shaw, C. F. Shawcross, F. E. Shearman, G. Shepherd, D. R. Shorter, A. Sillars, W. L. Sinton, H. H. Skinner, F. W. Slee, I. M. Smith, R. Mc. Smith, R. S. Smyth, J. S. Snowden, J. M. Sothern, A. Spreull; Dr. A. W. Stableforth; Messrs. J. S. Steward, D. L. Stewart, J. Strachan, A. Sutherland, O. Swarbrick, J. H. Taylor, Alex. Thomson (Senior Vice-President), H. Thornton, J. F. Timoney, R. S. Townson; Miss S. E. Troughton; Messrs. G. Tullis, P. Turnbull, A. L. Turner; Miss O. Uvarov; Messrs. K. N. Vaughan, F. G. Waddington; Miss G. Walker; Messrs. F. Ware, T. Watkins, D. E. Watkinson, R. P. Webber; Mrs. M. Weipers; Mr. E. Weissberg; Mrs. D. A. Weissberg; Miss R. Welch; Messrs. J. B. White, G. F. Wiggins, E. Wilkinson (Junior Vice-President), R. R. Willing, H. M. Wilson, J. G. Wilson; Miss M. E. M. Wilson; Dr. W. R. Woolridge (President of the R.C.V.S.), Messrs. A. N. Worden, A J. Wright.

VISITORS

Mrs. W. G. Atkinson; Mr. P. K. C. Austwick; Mesdames J. H. Barr, J. Bayliss, H. G. Begg, M. Beynon, E. A. Blackburn, Blaikley, and H. E. Bywater; Messrs. H. E. Bywater, and N. C. Collins; Mesdames J. A. Dall, J. Davies, and E. D. Dunn; Mr. B. Edwards; Mesdames M. Fisher, R. E. Glover, A. M. Graham, and M. B. Hawksley; Mr. N. M. Heywood; Mesdames M. Hewetson, B. W. Hill-Owens, J. Ingram; Miss A. M. Jennings; Mrs. D. L. Jennings; Mr. C. F. Kirkham; Mesdames M. Lauder, D. E. Leask, and M. Leckie; Mr. J. A. Leslie; Mesdames D. G. Llewellyn, R. C. Locke; Mr. S. Longbridge; Mesdames J. McCormac, J. McIndoe, and J. M. McKellar; Miss McKellar; Mrs. D. Motton; Messrs. E. S. Murphy, B. L. Nestel, H. M. Nestel, and W. G. R. Oates; Mesdames D. D. Ogilvie, G. M. G. Oliver, A. Parsons, E. D. Perkins, and J. Potter; Mr. and Mrs. L. R. Reeve; Mesdames S. C. Ritchie, Alex Robertson; Mr. A. M. Robson; Mesdames M. Rossiter, J. Scoggins; Mr. P. G. Scoggins; Col. R. O. Scott; Mesdames D. Shaw, M. G. Smith; Miss R. Spence; Mr. M. L. Tester; Mesdames Alex. Thomson, E. I. Thomson, and F. G. Waddington; Messrs. C. E. Waterhouse, T. I. Watkins; Mesdames M. Weipers, D. W. Wilkinson, H. C. Wilson, and A. J. Wright; Mr. M. Wright.

CONGRESS GROUP PHOTOGRAPH

If any member of the Association would like a copy of the Congress group photograph, and has not already ordered one, it may be obtained from the General Secretary of the B.V.A. The price is 7s. 6d. per print.

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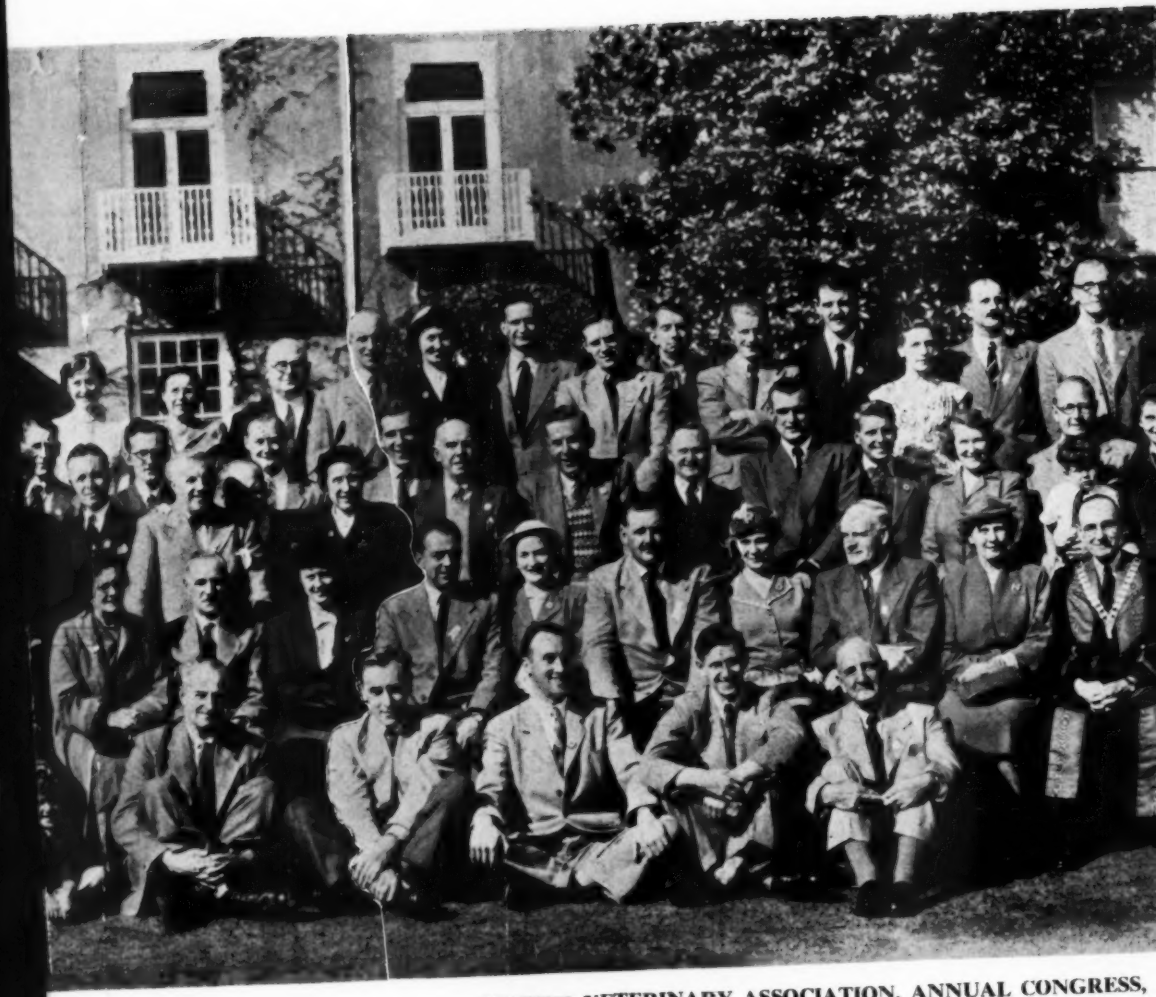

BRITISH VETERINARY ASSOCIATION, ANNUAL CONGRESS,

NGRESS, TRQUAY, SEPTEMBER, 1954

Photo: Panora Ltd., 56 Eagle Street, London, W.C.1.

Conference: The Feeding of Farm Animals for Health and Production

THIS highly successful conference, whose audience numbered over 500, took place on Tuesday and Wednesday of this week in the South Hall, Victoria Halls, Bloomsbury Square, London, W.C.1. The Association was well represented, and there was an approximately equal attendance from members of the Animal Feeding Stuffs Trade. On the platform were Professor Robertson, President of the B.V.A., who presided, Mr. A. Thomson, Senior Vice-President, Mr. G. N. Gould, Chairman of the Conference Sub-Committee of the Technical Development Committee, and Mr. A. J. Wright, Chairman of the Liaison Committee of the B.V.A. and the Animal Feeding Stuffs Trade. The Trade were represented on the platform by Mr. R. Silcock, President of the Compound Animal Feeding Stuffs Manufacturers National Association, and Mr. H. Norman Fulford, President of the National Association of Corn and Agricultural Merchants.

In addition to members of the B.V.A. and of the Trade there were, in the body of the hall, delegates from the following organisations: The Ministry of Agriculture; the Royal Agricultural Society of England; the National Farmers' Union; the Food and Agriculture Organisation; the National Farmers' Union of Scotland; the National Cattle Breeders' Association; the National Pig Breeders' Association; the National Sheep Breeders' Association; the Poultry Association of Great Britain; The Farmers' Club; The Nutrition Society; The Soil Association; and The British Society for Animal Production.

The Conference was officially opened at 10.30 a.m. on Tuesday by Professor Robertson. In the course of his speech our President said:

It is my pleasant duty, first of all, to welcome you here this morning to our Conference on "The Feeding of Farm Animals for Health and Production." We have, as you can see, a large and distinguished audience present consisting mainly and in about equal proportions of members of the British Veterinary Association and representatives of many firms within the Animal Feeding Stuffs Trade. I am fortunate in having with me on the platform, in addition to representatives of our own Association, two representatives of the Trade, Mr. H. Norman Fulford, President of the National Association of Corn and Agricultural Merchants, and Mr. R. Silcock, President of the Compound Animal Feeding Stuffs Manufacturers National Association. Other closely allied trade Associations are represented in the body of the hall as are also many and varied organisations related to the work of our profession and to the field of agriculture.

It gives me special pleasure to preside on this occasion, not only because of its magnitude and importance, but also because I have watched this Conference grow from very small beginnings to the ambitious enterprise in which we are about to take part.

The idea arose in discussions at the first meeting in March, 1953, of the Liaison Committee of the British Veterinary Association with the Animal Feeding Stuffs Trade, under the chairmanship of Mr. Alan Wright. Thus, following a suggestion that benefit might accrue from local discussions between members of our Association and members of the staff of Feeding Stuffs firms specially interested in nutritional problems, there came forward the idea of a national conference on similar lines. This was accepted in principle by the B.V.A. which, as many of you will remember, had already run similar conferences very successfully on a variety of subjects including Grassland Management, Metabolic Disorders and others. The idea was then referred to the Association's Technical Development Committee which, led by its active chairman, Mr. Gould, took up the matter enthusiastically and, with the help and advice of two representatives of the Animal Feeding Stuffs Trade, has developed the project on which we are about to embark.

The idea of a conference arose originally from a discussion of the occasional differences which arise between manufacturers of feeding stuffs and the users of them, in which the veterinary profession gets involved owing to the foodstuffs being blamed for upsets in the health of animals. Such instances are in fact rarer than is generally realised. My own Department in Edinburgh, for example, has for a number of years now assisted, particularly from the laboratory aspect, one of the larger food compounding firms to investigate complaints against its products arising in the North of England and in Scotland. The number of cases has been remarkably small. I believe this to be the general experience and it is no small tribute to the skill and care which the trade applies in providing rations for our livestock. But the few cases which do occur, usually from ignorance or error, can be spectacular and can be a source of irritation to all concerned. Though differences of opinion have considerable news value, the organisers of this Conference decided, in my view wisely, to concentrate attention not on the very limited field in which differences may arise but on the very large and very important interest which we share in contributing to the productivity of the herds and flocks of this country.

The veterinary surgeon was described by no less a body than a Government Committee (the first Loveday Committee) as "the physician of the farm and the guarantor of the nation's food supply." There is no need for me to elaborate on this defini-

tion. Every one in this room is aware in some degree or other of the tremendous progress our profession has made in eradicating or controlling epidemic disease and in reducing loss from malnutrition and from parasitic infestation. But our advisory efforts, vital though they are, would not of themselves come to full fruition without the aid of numerous services, including that supplied by the Feeding Stuffs Trade, for the possibility of improvement in many fields of animal production depends on the availability of the necessary food stuffs at a cost proportionate to the economy of the enterprise. While the work of our profession, therefore, makes advances in productivity possible, their achievement depends in no small degree on the consolidating activities of what I might call the "ground troops" in which the Feeding Stuffs Trade plays a prominent part. In other words we are all participators in a common struggle—which may well prove to be a vitally important one in the future of this country—the struggle to increase productivity to meet the needs of a large and still growing, as well as ageing, population, which with the spread of industrialisation abroad is threatened with a diminution in its purchasing powers in the markets of the world. It seems only wise, therefore, that we should get together to take stock and compare notes; for the more we know of each other's problems and viewpoints the more likely are we to arrive at mutually acceptable solutions to the benefit of the common community as a whole.

Some of you may have been a little surprised at the title of this Conference, for there is a tendency in certain quarters to think of the veterinary surgeon as concerned only with disease—the person to be sent for when something goes wrong, in the hope that he may be able to repair the damage and mitigate the loss. It would be idle to pretend that that is not one of our functions; an important one it is, and right glad we are to be able to help when we can in that direction. But it is not our sole nor our most important function, for veterinary surgeons have a natural interest not only in the welfare of their clients and their ability to meet their bills, but also in the welfare of their animals which they instinctively wish to protect from disease, pain and suffering of any sort. These two interests can only achieve full expression through measures to prevent disease and promote health. It is many decades now since King Edward made his laconic comment in connection with human disease—if preventable why not prevent it? And this comment finds its echo in the mind of the good practitioner, who asks himself not only "What is the matter with this patient and what can I do to cure it," but also, "Why is this animal sick and how could its illness have been prevented?" Sometimes he knows the answer, sometimes, alas, he does not; sometimes he can apply it, sometimes, alas, the opportunity is not provided. But health involves more than the mere absence of disease, and here I would cross swords a little with the choice of title for this Conference, which suggests a division between health and production. Every veterinary surgeon knows he will not get much thanks for conserving the life in our farm animals if functional activity remains badly impaired. In our sphere of work the term health has, therefore, little significance if divorced from production; with certain obvious exceptions few domestic animals are kept purely for sentiment or pleasure. Whichever may be the case with man, for the domestic species at any rate, the welfare state is not regarded as the ideal, and although it is outwith my remit I would suggest that even with *homo sapiens* a little more enthusiasm for productivity and a little less for leisure might lead to an increase in both health and happiness!

There are many aspects of the relationship of feeding to health in which the veterinary surgeon is directly involved. Thus the constituents of the diet may themselves be the direct cause of trouble, as by the transmission of infection or the direct action of some harmful constituent: the association of anthrax with imported foods and the occasional cases of castor bean poisoning are examples of the types of case I have in mind. Then there are the numerous deficiency diseases ranging from frank starvation and gross cases of lack of minerals or vitamins to the slightly subnormal productivity with no obvious signs of ill-health, which is all too common and which will require all our combined efforts to combat. And not only the food itself but even the way it is fed may be all important; for many a wholesome food given in the wrong way or at the wrong time can cause upset, so that it is often impossible to separate problems of nutrition from those of management in general. There is also a wide field of knowledge developing on the rôle of diet in the causation, the exacerbation and the prevention of many other diseases, infectious and mycotic alike, and particularly in the case of helminth and other parasites. And with the introduction of antibiotics to the field of nutrition this aspect has entered a new and delicate phase which may not only prove disappointing but also, with the higher levels of medical sometimes suggested, may prove full of possible pitfalls which it may require all our ingenuity to avoid.

Half a century ago all this was a closed book to veterinary surgeon and doctor alike, though there had been occasional glimpses of the light to come in the case of scurvy and beri-beri for example. But dietetic troubles paled to insignificance before the onslaughts of animal plagues, and nutrition as a science had to await the successes of bacteriology and their application in environmental sanitation before it could come into its own. And indeed these very successes by rendering possible great expansions of our flocks and herds throw the nutritional problems to the forefront, for there is no doubt that intensification, however desirable or necessary, brings many problems in its train, in which diet can be involved. Unfortunately, it is seldom possible to quote figures to show that effect, for vital statistics have not yet been adequately developed in the veterinary field; moreover it is only in recent years that the activities of pathologists, biochemists and nutritionists have enabled us to make accurate diagnoses of many of the conditions involved. But there is plenty of indirect evidence to suggest that such problems are likely to occupy our efforts with

greater frequency as development of our livestock industry proceeds and we must be on our guard against undue complacency.

I appreciate that in any industry calculated risks must on occasion be taken, but at least do not let us shut our eyes to possible dangers but let us take stock of the position and see what steps, if any, can be taken to avoid or lessen the risks.

Now I must not trespass on the fields of the many experts who are to follow but I hope that I have succeeded in emphasising the great interest our profession has in the problems of animal nutrition and how important it is that all the people involved in related fields should get together and pool their knowledge and experience. But I would also like to emphasise that health is something whole and indivisible; that while it may be necessary for various reasons to divide the problems it involves into various categories—bacteriological, nutritional, parasitological, etc., the animal is a unit and the herd is a unit, albeit a larger one—and as units they must be treated. As Field-Marshal Smuts once pointed out, life is living and living is an active reciprocal reaction between organism and environment. In curing or preventing disease and in promoting the healthy and productive life, we must always remember that fact. Feeding must not, therefore, be considered in isolation but only in combination with other environmental factors such as management, housing and sanitation if it is going to be fully effective. That means team work, and I would like to suggest that in that team the services of the veterinary surgeon might well be utilised in a wider capacity than is usually visualised.

We have in this country an innate suspicion of the expert as a person with myopic view, a suspicion which has on occasion played a useful part in saving us from precipitate erroneous activity. But it does tend to induce on occasion considerable apathy towards and even ignorance of the scope and potentialities of many organisations, and the veterinary profession is no exception.

Few people who have not experienced (or should I say survived) a veterinary training really appreciate its scope and extent; and I would like, therefore, just to drop the hint, that in the animal health and productivity team the veterinary surgeon might accept the responsibility of co-ordinator and, if need be, of leader.

The place for veterinary science is in the stream of life and not on its banks. I welcome, therefore, on behalf of our profession, this gathering of lay and professional people, of laboratory experts and practical men of affairs, to discuss topics of common interest. We all have something to give, we all have something to learn, and in the long run nothing but good can come from increase in mutual knowledge and understanding.

After Professor Robertson's speech, brief observations were made by Mr. Silcock and Mr. Fulford, after which Mr. J. C. Leslie, O.B.E., M.A., B.SC., read the opening Paper, "The World Supply Position of Animal Feeding Stuffs and its Influence on the Livestock Industry."

We hope to comment upon the Conference generally in a leading article next week, while the full proceedings, including the text of the papers and the discussions which followed them, will be issued a little later on in the form of a special handbook similar to those which contained the proceedings of the grassland and other conferences organised by the Association.

Victoria Veterinary Benevolent Fund

Annual General Meeting of the Ladies' Guild

The 23rd Annual General Meeting of the Ladies' Guild was held in the Torre Abbey Lounge, Torre Abbey, Torquay, on September 22nd, 1954.

The President, Mrs. D. I. Glover, welcomed the following ladies: Mesdames Atkinson, Barr, Benyon, Black, Begg, Dall, Dunn, Fisher, Forster, Harkness, Locke, Mather, Morgan, Motton, McCormac, Pugh, Pettett, Robson, S. C. Ritchie, F. M. Ritchie, J. P. Robertson, Shaw, Smith, Thomson, Turnbull.

Apologies for absence were received from Mesdames W. O. Jones, King, G. Wooldridge, W. R. Wooldridge, O'Dea, Olivier, and Hebeler.

Hon. Secretary's Report

The Hon. Secretary, Mrs. Hill-Owens, gave the report of the year's work. They were once more gathered together to discuss amicably and thoughtfully the work of their Fund, she said, which meant to many the happiness too often taken for granted by those who did not stop to think how privileged they were.

It had been a year of anxiety and sorrow for some, and special mention should be made of two names, Professor Buxton, President of the Parent Fund, whose 20 years of work remained a light shining for all time, and Mrs. Buxton, who has been three times President of the Ladies' Guild. Also Mr. William Brown, late Editor of THE RECORD, whose unfailing help at all times stood unique in their history. To Mr. Hebeler, their sympathy went out in the sudden illness of his wife. The sympathy of the Guild had been extended in each case and replies had been received.

The Guild's warm appreciation of 14 years unceasing work for the Fund was sent to Mrs. Quentin Stewart, of Ayr; and from the platform good wishes were expressed to her successor.

Mrs. Hill-Owens went on to applaud the splendid work that had been accomplished in Scotland, in Northern Ireland, in Eire, and in both North and South Wales. England, too, the vine from which the other branches sprang, had made a notable contribution, though a still more vigorous and more united effort was called for if all the objects of the Guild were to be accomplished.

It was their pleasing duty to place on record the Guild's indebtedness this year to the local Ladies' Committee of Torquay, especially mentioning Mrs. Dall, and Mrs. Atkinson, for their invaluable help.

The President, Mrs. Glover, was thanked for all she had done during her year of office, and for the valuable services she was still rendering to the Fund. The Ladies' Guild again gratefully acknowledged the help of B.V.A. Headquarters, and that of the V.V.B.F. Headquarters, at 10, Red Lion Square.

To Mr. Brown's successor, Mr. Mitchell, the Guild sent their good wishes. They acknowledged their indebtedness also to Professor Wright of Liverpool, the Hon. Auditor, who so kindly undertook that work for them and had done so for many years.

To all those ladies who had played their part once again this year the officers gave their grateful thanks. They had worked for the good of mankind in their own way and by their own means.

Election of Officers

The following ladies were elected: President, Mrs. D. McNabb; Vice-President, Mrs. D. I. Glover; Hon. Secretary, Mrs. B. Hill-Owens; Hon. Treasurer, Mrs. D. I. Glover; Hon. Auditor, Professor J. G. Wright, of Liverpool.

Committee: It was decided to abolish Rule 5 and strike out the last seven words of Rule 3. The proposition was made by Mrs. Alex Thompson, seconded by Mrs. Beynon, and carried.

Mrs. Atkinson proposed that the local Ladies' Committee, wherever the Congress was held, would be the Committee for that Congress year.

The local Ladies Committee being constituted by the ladies of the area where Congress was held, continuity could be ensured. This was agreed.

Hon. Treasurer's Report

It was very satisfactory and gratifying to be able to report that once again the balance at the bank was £900. This represented much hard work and generosity, and a large proportion of it came again from the Scottish Branch. Thank you seemed a very inadequate expression, but it was said most sincerely. The Hon. Treasurer felt sure that all the workers in the Scottish Divisions realised how much their efforts were appreciated. All branches had increased their contributions this year and the outlook was very bright. Without the Ladies' Guild the V.V.B.F. would have to dip heavily into capital and so their work was very well worth while.

The following details were given:

	£	s.	d.
Proceeds from Raffle (£36 4s.) and Dance (£135 5s. 4d.) at Aberdeen	171	9	4
North Ireland	9	0	0
North Wales	30	0	0
South Wales	100	0	0
Lancashire and Cheshire (including £3 3s. proceeds of a sale of work by Mrs. Blackie)	29	0	0
Mrs. R. E. Glover (Treasurer)	108	0	0
Scottish Branch Subscriptions and Donations	84	5	9
Ayrshire Dance arranged by Mrs. Stewart	89	4	0
Dumfries Dance arranged by Mrs. Sangster	84	6	3
Penrith Dance arranged by Mrs. Barr ...	79	15	0
Aberdeen Dance arranged by Mrs. Service	70	0	0
	£855	0	4

A cheque for £90—the result of the raffle at the dance at Torquay that year had been received. The warmest thanks were expressed to the S. and Mid. W. Divisions who made this very excellent sum possible.

Allocation of Money

It was resolved to allocate the following sums:—

	£	s.	d.
V.V.B.F. Donation for Current Relief ...	350	0	0
V.V.B.F. for Christmas and Summer Gift Fund	500	0	0
	£850	0	0

AGRICULTURAL RETURNS FOR ENGLAND AND WALES, SEPTEMBER, 1954

Cattle

The total number of cattle (including calves) returned was 8,094,000, an increase of 238,000 (3 per cent.) over September, 1953. Cows and heifers in milk (including beef cows) increased by 42,000 (2 per cent.) and heifers in calf by 38,000 (7 per cent.), but dry cows declined by 30,000 (4 per cent.). Bulls and bull calves were lower by 6,000 (5 per cent.). Other cattle, except females two years old and over, showed increases; males under one year old increased by 49,000 (10 per cent.), and females by 16,000 (2 per cent.). In the one-year-old and over classes males increased by 96,000 (9 per cent.). Female cattle between one and two years old increased by 41,000 (4 per cent.), but over two years old there was a decrease of 7,000 (1 per cent.).

Sheep

Ewes for breeding increased by 251,000 (5 per cent.), shearling ewes by 9,000 (1 per cent.), and ewe lambs by 15,000 (1 per cent.). Rams kept for service increased by 7,000 (5 per cent.), but ram lambs for service were fewer by 2,000 (4 per cent.). The number of other sheep dropped, those one year old and over by 158,000 (18 per cent.), and under one year old by 209,000 (5 per cent.).

Pigs

The total of pigs reached 5,693,000, an increase over the year of 1,235,000 (28 per cent.). Sows in pig increased by 67,000 (26 per cent.), and other sows for breeding by 41,000 (21 per cent.), but gilts in pig declined by 8,000 (7 per cent.). Each age-group of "all other pigs" showed a substantial increase.

Poultry

Fowls six months old and over increased by 507,000 (2 per cent.), but fowls under six months showed a very slight decrease. Ducks were lower by 342,000 (21 per cent.), and geese by 58,000 (9 per cent.). Turkeys of all ages were higher by 106,000 (9 per cent.).

In Parliament

Protection of Animals (Anaesthetics) Act

Lieut.-Colonel Bromley-Davenport (November 11th), asked the Minister of Agriculture what steps have been taken to bring to the notice of farmers the provisions of the Protection of Animals (Anasthetics) Act, 1954; and whether he will consider the desirability of issuing some simple explanatory memorandum with regard to the provisions of this Act.

Mr. Amory: My veterinary and livestock officers, who are in constant touch with the farmers, are aware of the provisions of the Act and are in a position to advise farmers. I am considering what further publicity might be given to its provisions and am grateful to my hon. and gallant Friend for his suggestion.

Lieut.-Colonel Bromley-Davenport: Is my right hon. Friend aware that many farmers, particularly in the more remote areas, are unaware that this new law limits the number of operations which their stockmen can carry out without an anaesthetic? Will he, therefore, intensify his publicity as soon as possible?

Mr. Amory: I will certainly look into that point. I am very anxious indeed that all farmers concerned should know exactly what is contained in the Act.

Deliberate Spreading of Myxomatosis

A new clause which prohibits deliberate spreading of myxomatosis was carried during the Committee stage of the Pests Bill in the House of Commons last Wednesday.

There were general cheers when Mr. Heathcoat Amory, Minister of Agriculture, accepted the clause on behalf of the Government. It was sponsored by Members on both sides of the House.

The new clause was moved by Dr. King. Under it anyone found guilty of the offence would be liable to penalties provided in the Bill for the illegal use of the gin trap. These are a maximum fine of £20 for a first offence, and a fine of up to £50 subsequently.

Dr. King said that the disease did not even have the merit of exterminating the rabbit. "Let us kill them by all means, but let us do it decently and cleanly. We can at least discourage this evil by labelling it a crime."

If we barred the gin trap and allowed the wilful spreading of myxomatosis, we were "swallowing a gnat and straining at a camel."

Mr. Heathcoat Amory intervened to announce the Government's acceptance of the clause. His statement was cheered by both sides of the House.

Explaining why the Government had had doubts about making the spreading of the disease a criminal offence, he said: "It has already spread far and wide and it is not likely now to be stamped out. Deliberate action is unlikely to have any real effect on its future course."

Enforcement of this law would be difficult. The deliberate spreading of infection was "just too easy."

The Government had made it clear it was strongly opposed to deliberate spreading. He had been trying to find a way, short of making it an offence, of setting a definite seal of disapproval on the practice and of providing some deterrent. "I admit I have not been successful."

News and Comment

ACCESSIONS TO THE R.C.V.S. LIBRARY

The following books have been received in the library during the last week:—

ARBER, A. Herbals, their origin and evolution: a chapter in the history of botany, 1470-1670. *Second edition*, Cambridge, University Press, 1953.

GASK, G. Essays in the history of medicine, London, Butterworth, 1950.

WAY, R. F. The anatomy of the bovine foot, Philadelphia, University of Pennsylvania Press, 1954.

WHITE, T. H. The book of beasts, being a translation from a Latin bestiary of the 12th century, London, Jonathan Cape, 1954.

COMING EVENTS

Nov. 25th.—Autumn Meeting of the Eastern Counties Division, B.V.A., at Bedford Lodge Hotel, Newmarket, 11.15 a.m.

Nov. 26th.—Ordinary General Meeting of the Royal Counties Division, B.V.A., at the Caversham Bridge Hotel, Reading, 4.15 p.m.

Nov. 26th.—Meeting of the Lincolnshire Division, B.V.A., at the Saracen's Head, Lincoln, 2.15 p.m.

Dec. 2nd.—General Meeting of the Central Division, B.V.A., at the Royal Veterinary College, Camden Town, London, N.W.1, 6 p.m.

Dec. 3rd.—Annual Dinner and Dance of the North Wales Division, B.V.A., in the Imperial Hotel, Llandudno, 7.p.m.

Dec. 8th.—Meeting of the Technical Development Committee, at 7, Mansfield Street, Portland Place, W.1., 10.30 a.m.

Dec. 13th.—General Meeting of the Midland Counties Division, B.V.A., at the Ministry of Agriculture, Woodthorne, Wergs Road, Tettenhall, Wolverhampton, 2.30 p.m.

Jan. 27th.—Annual Dinner-Dance of the North of Scotland Division, B.V.A. (in aid of the Victoria Veterinary Benevolent Fund), in the Northern Hotel, Aberdeen, 7.30 p.m.

AREA ERADICATION PLAN FOR TUBERCULOSIS

Statement showing the number of cattle in each county on June 4th, 1954, and the number of cattle in Attested Areas and Attested Herds on September 30th, 1954.

	Total Cattle on June 4th, 1954 (Provisional results)	Cattle in Attested Herds and Areas — Number	Cattle in Attested Herds and Areas — Percentage of Total Cattle
GREAT BRITAIN ...	9,785,558	4,875,628	49·8
England and Wales	8,071,558	3,688,068	45·7
England	7,008,558	2,917,698	41·6
Wales	1,063,000	770,370	72·5
Scotland	1,714,000	1,187,560	69·3
ENGLAND :			
Bedford	44,000	14,990	34·1
Berkshire	90,000	61,510	68·3
Buckinghamshire	116,000	46,980	40·5
Cambridge ...	31,000	12,620	40·7
Isle of Ely ...	21,000	2,930	14·0
Chester	252,000	98,140	38·9
Cornwall	290,000	95,480	32·9
Cumberland ...	248,000	195,160	78·7
Derby	192,000	52,060	27·1
Devon	432,000	174,030	40·3
Dorset	168,000	99,730	59·4
Durham	126,000	53,630	42·6
Essex	121,000	63,370	52·4
Gloucester ...	206,000	91,550	44·4
Hereford	147,000	62,850	42·8
Hertford	61,000	34,800	57·0
Huntingdon ...	29,000	7,050	24·3
Kent	117,000	57,490	49·1
Lancaster	290,000	130,760	45·1
Leicester	170,000	42,800	25·2
Lincoln—			
Parts of Holland ...	30,000	2,350	7·8
Parts of Kesteven	72,000	14,880	20·7
Parts of Lindsey	162,000	27,230	16·8
London	—	—	—
Middlesex ...	7,000	2,900	41·4
Norfolk	202,000	78,880	39·0
Northampton ...	148,000	37,200	24·0
Soke of Peterborough	7,000		
Northumberland ...	214,000	58,140	27·2
Nottingham ...	110,000	28,330	25·8
Oxford	110,000	56,900	51·7
Rutland	21,000	2,310	11·0
Salop	300,000	111,510	37·2
Somerset	340,000	172,760	50·8
Southampton ...	158,000	97,990	62·0
Isle of Wight ...	22,000	14,230	64·7
Stafford	247,000	61,390	24·9
Suffolk,, East ...	81,000	42,610	52·6
Suffolk, West ...	42,000	19,630	46·7
Surrey	55,000	34,880	63·4
Sussex, East ...	108,000	51,450	47·6
Sussex, West ...	79,000	47,380	60·0
Warwick	151,000	51,880	34·4
Westmorland ...	106,000	95,840	90·4
Wiltshire	219,000	121,310	55·4
Worcester	106,000	33,880	32·0
York, East Riding	144,000	16,710	11·6
York, North Riding	262,000	99,000	37·8
York, West Riding	354,000	137,640	38·9
Isles of Scilly ...	558	558	100·0
WALES :			
Anglesey	62,000	24,980	40·3
Brecon	52,000	42,560	81·8
Caernarvon ...	66,000	45,390	68·8
Cardigan	90,000	90,000	100·0
Carmarthen ...	154,000	154,000	100·0
Denbigh	110,000	60,600	55·1
Flint	63,000	21,380	33·9
Glamorgan ...	83,000	34,540	41·6
Merioneth	44,000	37,930	86·2
Monmouth... ...	75,000	29,020	38·7
Montgomery ...	108,000	84,160	77·9
Pembroke	116,000	116,000	100·0
Radnor	40,000	29,810	74·5
SCOTLAND :			
Aberdeen ...	247,000	67,820	27·5
Angus	71,000	27,550	38·8
Argyll	65,000	55,040	84·7
Ayr	167,000	167,000	100·0
Banff	58,000	16,460	28·4
Berwick	38,000	17,550	46·2
Bute	12,000	12,000	100·0
Caithness ...	28,000	15,180	54·2
Clackmannan ...	5,000	4,250	85·0
Dumfries	118,000	118,000	100·0
Dunbarton ...	19,000	19,000	100·0
East Lothian ...	17,000	8,370	49·2
Fife	70,000	46,730	66·8
Inverness ...	53,000	39,890	75·3
Kincardine ...	43,000	12,270	28·5
Kinross	10,000	7,120	71·2
Kirkcudbright ...	84,000	84,000	100·0
Lanark	102,000	102,000	100·0
Midlothian ...	26,000	18,700	71·9
Moray	31,000	14,620	47·2
Nairn	9,000	4,760	52·9
Orkney	49,000	26,710	54·5
Peebles	13,000	13,000	100·0
Perth	96,000	47,290	49·3
Renfrew	33,000	33,000	100·0
Ross-shire ...	41,000	25,750	62·8
Roxburgh	40,000	21,590	54·0
Selkirk	7,000	5,890	84·1
Stirling	46,000	46,000	100·0
Sutherland ...	10,000	7,610	76·1
West Lothian ...	17,000	13,410	78·9
Wigtown	82,000	82,000	100·0
Zetland	7,000	7,000	100·0

The number of Attested Herds on September 30th, 1954, was as follows :—England 63,142, Wales 31,409, Scotland 32,065 ; Great Britain 126,616.

There were also 3,428 Supervised Herds containing 98,740 cattle. These herds need only one clear tuberculin test to qualify as Attested Herds.

HOSPITALITY WANTED

A German veterinary surgeon, Dr. Hubert Ritter, wishes to arrange for his 16-year-old daughter to stay with the family of a British member of the profession next summer, between July 15th and September 1st. Dr. Ritter wishes to meet and make himself known to anyone who may be good enough to offer such hospitality, and he will be in London on December 1st. His home address is:— Sparkasse Engoldsbach Nr 236, (13B) Engoldsbach (Ndby), Germany.

R.C.V.S. EXAMINATIONS

Thursday, December 9th, 1954. M.R.C.V.S. Written Examinations.

Friday, December 10th, 1954. M.R.C.V.S. Written Examinations.

Monday, December 13th, 1954. M.R.C.V.S. Practical and Orals commence (Panels " A " and " B ").

PERSONAL

Births

LUKE.—On October 14th, 1954, at Limuru, Kenya, to Alison (*née* Eisdaile), wife of W. S. Luke, B.A., M.R.C.V.S., a brother for Susan, Gillian, Jane, Anthea, and Quentin.

MOODIE.—On October 6th, 1954, at Brisbane, Queensland, to Rosemary, wife of Edwin Moodie, B.SC., PH.D., M.R.C.V.S., a son, Keith, brother to Caroline and Robert.

★

His many friends will be concerned to hear that Mr. Thomas Le Quesne Blampied, F.R.C.V.S., of St. Helier, Jersey, has just undergone an operation at the Royal Masonic Hospital in London. We understand that his progress is satisfactory.

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax:

Cornwall. Carsawen Farm, Mylor, Falmouth (Nov. 11).

Devon. Court Barton, Coffinswell, Newton Abbot (Nov. 6).

Kent. New Barn Farm, Marsh Green, Edenbridge (Nov. 10).

Leics. Springs Farm, Main Street, Fleckney, Leicester (Nov. 11).

Notts. Nicker Hill Farm, Keyworth, Nottingham (Nov. 10).

Surrey. The Paddock, Northcote Farm, Shamley Green, Guildford (Nov. 11).

Warwicks. Mount Farm, Grendon, Atherstone (Nov. 8).

Fowl Pest:

Essex. Burnt House Farm, Wimbush, Saffron Walden (Nov. 11).

Lincs. Haltoft End, Freiston, Boston (Nov. 10).

Norfolk. High House Farm, Welbourne, Dereham (Nov. 9); Stone Road Farm, Mattishall; Badley Moor Farm, E. Dereham (Nov. 10); Bylaugh Hall Poultry Farm, Bylaugh (Nov. 11).

Swine Fever:

Derbys. Piggeries, The Lane, Curbar, Sheffield (Nov. 9).

Devon. Blue Violet Farm, Bow, Crediton (Nov. 11).

Herts. 6, Council Houses, Radwell, Baldock (Nov. 8).

Hunts. Frog Hall, The Hollow, Ramsey (Nov. 10); Malting Yard, New Town, Ramsey (Nov. 11).

Lincs. Ings Road, Kirton Lindsey, Gainsborough (Nov. 8); Bracebridge Heath Hospital, Bracebridge Heath, Lincoln (Nov. 10).

Norfolk. Willow Farm, Garvestone, Norwich (Nov. 11).

Salop. Woodgreen Farm, Redhill, St. George's, Oakengates (Nov. 9).

Staffs. 19, Kiddermore, Green Road, Brewood (Nov. 8); Piggeries, Stafford Road, Hednesford (Nov. 10).

Suffolk. Milden Hall, Milden, Brent Eleigh, Sudbury (Nov. 11).

Surrey. Ballards Farm, Ballards Farm Road, Addington (Nov. 9).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

WILLIAM HUNTING

Sir,—I heartily support those who have protested against the alteration of the cover of THE VETERINARY RECORD.

William Hunting was a great and a humble man, and he did much for the agricultural and veterinary communities. There are not too many of his kind about and it seems an ungrateful act to William Hunting's memory to have removed his portrait from his literary creation.

I hope the Editor and the Management Committee will show they reflect something of Hunting's largeness of spirit by restoring THE RECORD to its original sound and simple characteristic state.

Your faithfully,

K. D. DOWNHAM,

Royal Agricultural College,
Cirencester.

November 2nd, 1954.

Sir,—I have every reason to believe that the majority of our profession will resent the removal of the portrait of one of the greatest and far-seeing veterinarians who adorned our profession, as well as being the founder of THE RECORD. Why rob posterity of its right to see, yes, and study the features of such a man?

Hunting and I were friends for many years, hence I am in a position to testify to his being many years in advance of the times, and hiding his light under a bushel, as he steadily gave the benefit of his knowledge to students as well as to those who had qualified. He was one of the kindest and most helpful of men, beloved by all, particularly the students. Again, why deprive posterity of his features?

With regard to the cover of THE RECORD that heralded the " new era " of it. It was, in my humble opinion, to say the best of it, daringly glaring even for a commercial publication, but for an honourable profession, *no*, and again, *no !*

Yours faithfully,

R. F. WALL.

The Willows Bungalow,
Maidenhead Road,
Windsor, Berks.

November 11th, 1954

A LEGITIMATE GRIEVANCE

Sir,—May I be allowed to offer some figures which might be of interest to some members of the profession:—

Total number of Members of R.C.V.S.—5,730; Members of B.V.A.—4,049; Percentage of Membership of R.C.V.S. who are B.V.A. Members—70.6 per cent.

At 22 Divisional meetings reported in a recent supplement there were 561 present; average attendance 25 members (approximately). There are 33 Divisions of the B.V.A., so that working from an average attendance of 25 that would mean a total attendance of 825 members. This represents 26 per cent. of the membership of the B.V.A. These meetings were the ones, for the most part, at which the Council representatives were elected. From these figures it would appear that Council B.V.A. are the elected representatives of 26 per cent. of 70 per cent. of the R.C.V.S.=Approximately *one fifth*.

One of the most startling figures is that of a Society—who have six representatives on the Council B.V.A. At the meeting at which these six representatives were elected—only 13 Members were present! (Rather reminiscent of the delightful Russian story of the man who was put in prison for stealing the results of next year's elections).

I fully realise that destructive criticism is a pleasing but useless pastime. What are the reasons for poor attendance at B.V.A. meetings? Time perhaps? Distance to be travelled? Is not one answer to these questions smaller and more "local" branches holding evening or week-end meetings?

Is it any wonder that week after week one reads letters in THE RECORD headed "Legitimate Grievance" which refer to the disastrous affects of charitable clinics on the practices of members when the percentage representation on our governing body is so paltry. Can anyone imagine the Doctors, Dentists, Barristers, and the Solicitors tolerating unqualified practice in "Mobile Clinics"—it is monstrous and ludicrous. How many Members of the Council B.V.A. have to earn their living in the hard grind of competitive practice?

Surely when one political party is pledged to land nationalisation if returned to power, it is essential that the profession *as a whole* has a chance to discuss such a possibility of nationalisation—or are we to be caught with our "stethoscopes dangling"—as were the medical profession . . .?

Yours faithfully,

ROGER MASSEY.

P.S. I wonder what the percentage poll is at the R.C.V.S. Council elections? Perhaps a Member could enlighten us on this point?

11, Widford Road,
Chelmsford, Essex.

November, 1954.

DOCKING IN 1580

Sir,—As we have been recently reminded of the Docking and Nicking of Horses Act, 1949 in your News and Comments section, the following quotation from "Horsemanship" by Thomas Blundeville, published in 1580 may be of some interest. As will be seen, the excuses put forward in recent times by advocates of docking are as old as the hills and their explanations of the necessity of this act just as vague as they ever were.

"As for his taile, the longer it be, he shall the better defend himselfe therewith in summer season from the flies. And therefore Camerarius doth not a little marvell at those which use to curtaile their horses and to sheare their maine upon every light occasion, as perhaps, bicause the haire falleth awaie or that they be swing tailed, and seeke not rather to remedie such faults otherwise, and to preserve thereby the natural beautie of the horse, without the which, he is not only fowle to the eie, but also infamous. And though some held opinion, that such curtailing make the horses backe the stronger, without alleging anie great reason whie, yet such strength doth not countervaile the great deformitie and infamie . . ."

Yours faithfully,

J. W. BARBER-LOMAX.

Garsdale,
Calrews,
Bury, Lancs.

November, 10*th*, 1954.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-mouth	Fowl Pest	Sheep Scab	Swine Fever
1st to 15th October, 1954		16	—	—	13	—	40
Corresponding period in	1953	14	—	—	16	—	62
	1952	81	—	3	9	—	31
	1951	13	—	—	9	—	112
1st January to 15th October, 1954 ...		237	4	12	615	—	1,202
Corresponding period in	1953	519	—	28	753	—	2,352
	1952	738	—	494	180	1	723
	1951	332	—	28	610	5	1,025

TUBERCULOSIS ORDER OF 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period 1st July to 30th September, 1954, was 375.